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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,973	04/03/2001	Kenichiro Mori	684.3170	9679

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EXAMINER

ESPLIN, DAVID B

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 09/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,973

Applicant(s)

MORI, KENICHIRO

Examiner

D. Ben Esplin

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-26,29-31,34,37 and 38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26,31 and 34 is/are allowed.
- 6) ☒ Claim(s) 18-25,29,30,37 and 38 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 April 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The previously made objection to the drawings is hereby withdrawn in light of the amendment of the claims filed 8/7/03.

Claim Objections

The previously made objection to the claims is hereby withdrawn in light of the cancellation of the objected to claims in the amendment filed 8/7/03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 18-22, 24, 25, 29, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,211,544 to Shiraishi.

FIG. 20 of Shiraishi shows an illumination optical system including a diffractive optical element (diffraction grating 12), an angular distribution transforming unit (lens system 71), a multiple beam producing unit (fly-eye lens 72), a light projecting element (condenser lens 75), and a blocking member (spatial filter 16). The blocking member is shown as adjacent to a light

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exit surface of the multiple beam producing unit. Further, Shiraishi describes the location of the diffractive optical element as being at the Fourier transform plane of the multiple beam producing unit (col. 28 lines 54-58). Also disclosed, is the used of an adjustable optical element (lens system 73) disposed between the diffractive optical element and the multiple beam producing unit (col. 30 lines 29-32). Still further Shiraishi discloses that both the diffractive optical element and the blocking member are demountable (col. 6 lines 8-9 and 66-67).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi as applied to claims 18-22, 24, 25, and 29 above, and further in view of U.S. Patent No. 4,918,583 to Kudo et al.

Although Shiraishi does not teach the use of an internal reflection member in an illumination optical system, Kudo '583 shows that the use of an internal reflection member (internal reflection type integrator 10 of FIG. 1) in an illumination optical system was well known in the art. Therefore, it would have been obvious to dispose an internal reflection member in the illumination optical system of Shiraishi, adjacent to the light source, in order to uniformize the exposure light prior to further processing (col. 4 lines 32-38 of Kudo).

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Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi as applied to claims 18-22, 24, 25, 29, and 30 above, and further in view of U.S. Patent No. 6,040,894 to Takahashi.

Shiraishi is silent concerning the specific structure of the angular distribution transforming unit, and therefore does not teach of moving an optical element along an optical axis. However, Takahashi teaches that the use of an angular distribution transforming unit (optical system 5) including an optical element movable along the optical axis (see FIG. 1). So it would have been obvious to dispose the angular distribution transforming unit of Takahashi in the system of Shiraishi as an art recognized specific embodiment of an angular distribution transforming unit.

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi as applied to claims 18-22, 24, 25, 29, and 30 above, and further in view of U.S. Patent No. 5,345,292 to Shiozawa et al.

Shiraishi is silent concerning the specific structure of the angular distribution transforming unit, and therefore does not teach of demountably inserting a plurality of optical elements. However, Shiozawa teaches that the use of an angular distribution transforming unit (imaging system 101) including a plurality of optical elements demountably inserted into the optical axis (optical device 8 of FIG. 1). So it would have been obvious to dispose the angular distribution transforming unit of Shiozawa in the system of Shiraishi as an art recognized specific embodiment of an angular distribution transforming unit.

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Allowable Subject Matter

Claims 26, 31, and 34 are allowed.

Response to Arguments

Applicant's arguments filed 8/7/03 have been fully considered but they are not persuasive. Applicant suggests that the lens system 71 of Shiraishi does not meet the claimed limitation of an angular distribution transforming unit. However, Applicant has failed to point out a structural difference between the lens system shown and the simple collimator lens 4 that is disclosed as being the angular distribution transforming unit in the subject application. Since Examiner is not able to determine any substantial limitations of the lens system of Shiraishi in comparison with a standard collimator lens, as is called for by the Applicant, this rejection is deemed proper. With respect to Applicant's argument that Shiraishi does not include an internal reflection member, Examiner concedes that this is true, but holds that Shiraishi has only been used to reject one claim including this element, and that is addressed in the 35 U.S.C. sec. 103 rejection of Shiraishi in view of Kudo '583, set forth above.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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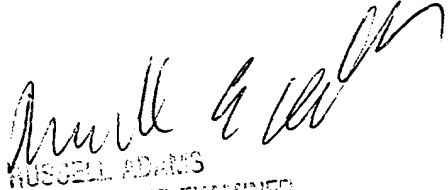
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Ben Esplin whose telephone number is (703) 305-4022. The examiner can normally be reached on Mon.-Fri. (8am-4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell E. Adams can be reached on (703) 308-2847. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DBE
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RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
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